

WHAT IS CLAIMED IS:

1. An X-ray mask comprising:
a mask pattern;
protection means for forming a dust-proof space
5 for protecting said mask pattern; and
a hole for ventilating between the dust-proof
space and an outer atmosphere.
2. An X-ray mask according to claim 1, wherein
10 said X-ray mask comprises a transmission type mask,
which comprises an X-ray transparent membrane, on a
surface of which said mask pattern is formed, and said
protection means is arranged on at least one of a front
surface side and a rear surface side of said membrane.
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3. An X-ray mask according to claim 1, wherein
said X-ray mask comprises a reflection type mask, in
which a multilayered film reflection layer and said
mask pattern are formed on a substrate, and said
20 protection means is arranged on said mask pattern.
4. An X-ray mask according to claim 1, wherein
said protection member comprises a detachable
protection member.

5. An X-ray mask according to claim 1, wherein said protection member comprises an X-ray transparent pellicle film.

5 6. An X-ray mask according to claim 1, wherein said protection member is subjected to an antistatic treatment.

10 7. An X-ray mask according to claim 1, wherein said hole has a lid which is free to open/close.

8. An X-ray mask according to claim 1, wherein said hole has a filter.

15 9. An X-ray mask comprising:
an X-ray transparent membrane;
a mask pattern formed on a surface of said
membrane; and
protection members formed on both a front surface
20 side and a rear surface side of said membrane and
forming a dust-proof space.

10. An X-ray mask according to claim 9, wherein the protection members are detachable.

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11. An exposure method comprising the steps of:

preparing an X-ray mask comprising a mask pattern
and detachable protection means for forming a
dust-proof space for protecting said mask pattern;

carrying said X-ray mask with said protection
5 means attached; and

exposing said mask pattern to X-rays while said
protection means is detached.

12. A device manufacturing method for
10 manufacturing a microdevice in processes including an
exposure method of claim 11.

13. An exposure apparatus comprising:
means for holding an X-ray mask of any one of
15 claims 1 to 10; and
means for transferring a mask pattern onto a
substrate by exposure by irradiating X-rays onto said
X-ray mask.